

**DOCKET NO. D-1991-088 CP-7**

**DELAWARE RIVER BASIN COMMISSION**

**Upper Gwynedd Township  
Wastewater Treatment Plant Service Area  
Expansion & Sewage Conveyance System Modification  
Upper Gwynedd Township, Montgomery County, Pennsylvania**

**PROCEEDINGS**

This docket is issued in response to an Application submitted to the Delaware River Basin Commission (DRBC or Commission) by Environmental Engineering and Management Associates Inc. on behalf of Upper Gwynedd Township on December 12, 2011 (Application) for a wastewater treatment plant (WWTP) service area expansion and sewage conveyance system modification. The project was recommended for approval by the Pennsylvania Department of Environmental Protection (PADEP) on February 6, 2012, but the PADEP is withholding its Water Quality Management (Part II) Permit No. 4611407 until the project is approved by the Commission. The PADEP issued the National Pollutant Discharge Elimination System (NPDES) Permit No. PA0023256 A-2 on February 19, 2009 for the project WWTP.

The Application was reviewed for inclusion and continuation of the project in the Comprehensive Plan and approval under Section 3.8 of the *Delaware River Basin Compact*. The Montgomery County Planning Commission has been notified of pending action. A public hearing on this project was held by the DRBC on March 7, 2012.

**A. DESCRIPTION**

**1. Purpose.** The purpose of this docket is to approve the expansion of the service area of the existing Upper Gwynedd Township (Upper Gwynedd) WWTP, to include an additional annual average flow of 0.43 million gallons per day (mgd) of municipal wastewater that is currently being treated at the North Wales Water Authority (North Wales) WWTP and discharged to an unnamed tributary to the Wissahickon Creek (UNT Wissahickon Creek). This docket also approves the installation of approximately 4,500 linear feet (LF) of gravity sewer designed to collect and convey the wastewater generated by the expanded service area to the Upper Gwynedd WWTP, as well as modifications to appurtenant influent and effluent pump stations at the Upper Gwynedd WWTP to accommodate the additional flow. This docket also continues the approval to install the Biomag process to the WWTP approved under the previous docket. No other modifications to the existing facilities at the WWTP are proposed; the WWTP will remain designed for an annual average flow of 5.7 mgd and a hydraulic capacity of 6.5 mgd.

The WWTP has the capacity to treat the additional 0.43 mgd of flow. As a result of the proposed project, the North Wales WWTP will no longer receive wastewater flows from its service area once the new collection and conveyance system goes into operation, and will subsequently cease to discharge to the UNT Wissahickon Creek.

**2. Location.** The existing Upper Gwynedd WWTP is located on Township Line Road between North Wales and Swedesford Roads in Upper Gwynedd Township, Montgomery County, Pennsylvania. The new gravity sewer will be located in Upper Gwynedd Township, Montgomery County, Pennsylvania. The WWTP will continue to discharge to the Wissahickon Creek at River Mile 92.5 – 12.8 – 12.7 (Delaware River – Schuylkill River – Wissahickon Creek). The North Wales WWTP currently discharges to the UNT Wissahickon Creek, approximately ¼ mile upstream of its confluence with the Wissahickon Creek. The confluence is approximately one (1) mile upstream of the Upper Gwynedd WWTP outfall.

The Upper Gwynedd WWTP & North Wales WWTP outfalls are located in the Wissahickon Creek Watershed as follows:

OUTFALL NO.	LATITUDE (N)	LONGITUDE (W)
001 (Upper Gwynedd WWTP)	40° 11' 22"	75° 17' 02"
001 (North Wales WWTP)	40° 12' 21"	75° 17' 19"

**3. Area Served.** The docket holder's WWTP will continue to serve the majority of Upper Gwynedd Township, as well as portions of Montgomery, Worcester, Whitpain, and Lower Gwynedd Townships; all in Montgomery County, Pennsylvania. This docket approves the docket holder's request to expand its service area to include the flows from the North Wales WWTP service area, which includes all of North Wales Borough and a small portion of Upper Gwynedd Township, located in Montgomery County, Pennsylvania.

For the purpose of defining the Area Served, the Application is incorporated herein by reference consistent with conditions contained in the DECISION section of this docket.

**4. Physical features.**

**a. Design criteria.** The existing WWTP is approved by PADEP for an annual average flow up to 5.7 mgd and is currently operating at an annual average flow of 3.3 mgd; and therefore has adequate treatment capacity to treat the additional annual average flow of 0.43 mgd generated by the expanded service area. The WWTP has a hydraulic design capacity of 6.5 mgd and will continue to provide secondary advanced treatment through an extended aeration activated sludge process.

**b. Facilities.** The existing WWTP consists of headworks, dual equalization tanks for use during peak flows, and three (3) parallel primary clarifiers. From the clarifiers, wastewater flows to a split train of aeration tanks and final clarifiers. There are four (4) existing aeration tanks and two (2) clarifiers on the main treatment train, used during normal flows, and two (2) existing aeration tanks and two (2) clarifiers on a supplemental treatment train used during peak flows. Ferric chloride is added to the aeration tanks for phosphorus reduction.

Wastewater from the clarifiers is sent to two (2) ultraviolet light (UV) disinfection tanks prior to discharge to Wissahickon Creek.

The docket holder was approved by the DRBC on September 15, 2010 via Docket No. D-1991-088 CP-6 to add a Biomag process to the WWTP, which involves the addition of magnetite to the existing aeration tanks in order to reduce settling time, after which the magnetite is removed and recycled. The Biomag project is currently in the design phase and is anticipated to be completed in 2013, according to the docket holder.

The docket holder will construct approximately 4,500 linear feet (LF) of new Polyvinyl Chloride (PVC) gravity sewer pipe, varying in diameter. The new gravity sewer pipe will connect to and intercept the wastewater flows from the North Wales WWTP system. In addition the docket holder will replace a portion of the existing Upper Gwynedd sewage conveyance system to convey the additional flow to the Upper Gwynedd WWTP. The proposed new portion of conveyance system and the modified portion of the existing Upper Gwynedd conveyance system are designed to accommodate a total flow of up to 5 mgd. The North Wales WWTP is designed to accommodate a flow up to 2.5 mgd, and therefore, the proposed modified conveyance system has adequate capacity to convey the expanded service area wastewater to the Upper Gwynedd WWTP.

The docket holder will also modify the Upper Gwynedd WWTP influent pump station installing one (1) additional wet weather pump; and the WWTP effluent pump station installing four (4) additional effluent pumps. The additional effluent pumps will enable the conveyance of the peak WWTP discharge during times when in-stream flows are high in the receiving stream (Wissahickon Creek).

Other than the modifications to install the Biomag process, no other modifications to the existing treatment processes at the WWTP are proposed. The WWTP will remain designed for an annual average flow of 5.7 mgd and a hydraulic capacity of 6.5 mgd. The WWTP treatment facilities have capacity to treat the additional 0.43 mgd of flow.

As a result of the proposed project, the North Wales WWTP will no longer receive wastewater flows from its service area once the new collection and conveyance system goes into operation, and will subsequently cease to discharge to the UNT Wissahickon Creek.

A portion of the WWTP is located in the 100-year floodplain. The portion of the WWTP located in the floodplain is protected by an earthen dike, which was constructed outside of the floodway of Wissahickon Creek, to an elevation that is one foot above the 100-year flood level. The proposed modifications to the WWTP treatment facilities (influent and effluent pump stations) are located outside the floodway and above the 100-year flood plain elevation.

Wasted sludge will be continued to be hauled off-site by a licensed hauler for disposal at a State-approved facility.

c. **Water withdrawals.** The potable water supply in the project service area is provided by wells owned and operated by the North Wales Water Authority, as described in detail in DRBC Docket No. D-1990-006 CP-3, approved on December 8, 2011.

d. **NPDES Permit / DRBC Docket.** NPDES Permit No. PA0023256 A-2, approved by PADEP on February 19, 2009, includes effluent limitations for the annual average project discharge of 5.7 mgd to surface waters classified by the PADEP as trout stocking fishery (TSF). The proposed improvements (sewage conveyance system and pumping facilities improvements) were recommended for approval by the PADEP on February 6, 2012, but the PADEP is withholding its Water Quality Management (Part II) Permit No. 4611407 until the project is approved by the Commission.

The following average monthly effluent limits are among those listed in the NPDES permit and meet or are more stringent than the effluent requirements of the DRBC.

**EFFLUENT TABLE A-1: DRBC Parameters Included in NPDES permit**

OUTFALL 001		
PARAMETER	LIMIT	MONITORING
pH (Standard Units)	6 to 9 at all times	As required by NPDES permit
Total Suspended Solids	30 mg/l	As required by NPDES permit
CBOD (5-Day at 20° C)		As required by NPDES permit
5/1 to 10/31	5 mg/l (85% minimum removal*)	
11/1 to 4/30	10 mg/l (85% minimum removal*)	
Ammonia Nitrogen		As required by NPDES permit
5/1 to 10/31	0.74 mg/l	
11/1 to 4/30	2.22 mg/l	
Fecal Coliform	200 colonies per 100 ml	As required by NPDES permit

\* DRBC Requirement

**EFFLUENT TABLE A-2: DRBC Parameters Not Included in NPDES permit**

OUTFALL 001		
PARAMETER	LIMIT	MONITORING
Total Dissolved Solids	1,000 mg/l	One per quarter*

\* See Condition II.t.

e. **Cost.** The overall cost of this project is estimated to be \$2,296,250.

f. **Relationship to the Comprehensive Plan.** The existing WWTP was included in the Comprehensive Plan by Docket No. D-1970-068 CP-1 on September 29, 1970. The WWTP was modified under the following dockets:

DOCKET NO.	DRBC APPROVAL DATE	WWTP MODIFICATION
D-1987-029 CP-1	May 27, 1987	Rerate (2.2 to 2.5 mgd)
D-1991-088 CP-1	February 26, 1992	Expansion (2.5 to 4.5 mgd)
D-1991-088 CP-2	September 26, 2005	Upgrades / Improvements

DOCKET NO.	DRBC APPROVAL DATE	WWTP MODIFICATION
D-1991-088 CP-3	September 27, 2007	Rerate (4.5 to 5.7 mgd)
D-1991-088 CP-4	May 14, 2008	Upgrades / Improvements
D-1991-088 CP-5	July 14, 2010	Upgrades / Improvements
D-1991-088 CP-6	September 15, 2010	Upgrades / Improvements

The expansion of the service area of the Upper Gwynedd WWTP to include the North Wales WWTP service area and the associated improvements to the sewage conveyance system and Upper Gwynedd Township WWTP pumping facilities will be incorporated into the Comprehensive Plan by approval of this docket.

## **B. FINDINGS**

The purpose of this docket is to approve an expansion of the service area of the existing Upper Gwynedd WWTP to include an additional annual average flow of 0.43 million gallons per day (mgd) of municipal wastewater that is currently being treated for discharge at the North Wales WWTP. This docket also approves the installation of approximately 4,500 LF of gravity sewer designed to collect and convey the wastewater generated by the expanded service area to the Upper Gwynedd WWTP and modifications to the Upper Gwynedd WWTP influent and effluent pumping facilities to accommodate peak flows. This docket also continues the approval to install the Biomag process to the WWTP approved under the previous docket.

No modifications to the existing treatment processes at the WWTP are proposed; the WWTP will remain designed for an annual average flow of 5.7 mgd and a hydraulic capacity of 6.5 mgd. The WWTP treatment facilities have capacity to treat the additional 0.43 mgd of flow.

The North Wales WWTP currently receives an annual average flow of 0.43 mgd of municipal wastewater from the Borough of North Wales for treatment and discharge to the UNT Wissahickon Creek at a location approximately ¼ mile upstream of the UNT Wissahickon Creek's confluence with the Wissahickon Creek. The confluence is located approximately one (1) mile upstream of the Upper Gwynedd WWTP outfall. The UNT Wissahickon Creek upstream of the North Wales WWTP outfall is intermittent, as defined by the Section 3.10.6.F of the Commission's Water Quality Regulations (*WQR*) as "a ditch, canal, or natural water course which serves only to convey runoff during and after a storm". Currently, the North Wales WWTP effluent is the only flow in the UNT Wissahickon Creek at certain times of the year.

Section 3.10.4.F. of the *WQR* states that "discharges to intermittent streams may be permitted by the Commission only if there is no reasonable economical alternative, the project is environmentally acceptable, and would not violate the stream quality objectives set forth in Section 3.10.3.B.1.a."

DRBC Docket No. D-1986-020 CP-2, issued on May 5, 2010, approved the North Wales Water Authority to construct upgrades to the North Wales WWTP, including an activated sludge treatment system consisting of a three-cell aerobic unit and two (2) secondary clarifiers, in order to address the aging infrastructure at the North Wales WWTP. According to the North Wales

Water Authority, the upgrade was not constructed because the connection to the Upper Gwynedd system was more economically feasible than constructing the upgrade. The diversion of the North Wales flow to the Upper Gwynedd WWTP, approved by this docket (D-1991-088 CP-7), is an economically feasible solution to address the potential for violations of Section 3.10.3.B.1.a. as described above. Upon approval of this docket, the Executive Director will initiate actions to rescind the approval for the North Wales WWTP, Docket No. D-1986-020 CP-2, to discharge to the UNT Wissahickon Creek. The docket rescission will be effective upon the completion of the Upper Gwynedd sewer and WWTP improvements necessary to connect the North Wales system to the Upper Gwynedd WWTP approved by this docket.

The UNT Wissahickon Creek's confluence with the Wissahickon Creek is located one (1) mile upstream of the Upper Gwynedd WWTP outfall. Therefore, as a result of the project, the UNT Wissahickon Creek and the one-mile stretch of the Wissahickon Creek above the Upper Gwynedd WWTP outfall will no longer receive flow from the North Wales WWTP once the North Wales WWTP ceases discharging upon its flows being directed to the Upper Gwynedd WWTP.

On February 19, 2009, PADEP approved NPDES Permit No. PA0023256 A-2 for the Upper Gwynedd WWTP which includes effluent limitations for the annual average project discharge of 5.7 mgd. On September 29, 2010, PADEP approved the Act 537 Plan Update for the Upper Gwynedd WWTP to accept an additional average flow of 0.43 mgd from the North Wales WWTP service area. The proposed improvements (sewage conveyance system and pumping facilities improvements) were recommended for approval by the PADEP on February 6, 2012, via Part II Permit No. 4611407; however the PADEP is withholding its Part II permit until the project is approved by the Commission.

Near the project site, the Wissahickon Creek has an estimated seven-day low flow with a recurrence interval of ten years of 1.3 mgd (2 cfs). The ratio of this low flow to the annual average flow of the Upper Gwynedd WWTP of 5.7 mgd is 0.23 to 1.

The nearest surface water intake of record for public water supply downstream of the project discharge is operated by the City of Philadelphia on the Schuylkill River (Queen Lane Intake), which is located approximately 19 river miles downstream from the Upper Gwynedd Township WWTP outfall.

The project does not conflict with the Comprehensive Plan and is designed to prevent substantial adverse impact on the water resources related environment, while sustaining the current and future water uses and development of the water resources of the Basin.

The limits in the NPDES Permit are in compliance with Commission effluent quality requirements, where applicable.

The project is designed to produce a discharge meeting the effluent requirements as set forth in the Water Quality Regulations of the DRBC.

**C. DECISION**

I. Effective on the approval date for Docket No. D-1991-088 CP-7 below:

a. The project described in Docket Nos. D-1991-088 CP-6 is removed from the Comprehensive Plan to the extent that it is not included in Docket No. D-1991-088 CP-7; and

b. Docket No. D-1991-088 CP-6 is terminated and replaced by Docket No. D-1991-088 CP-7.

c. The project and the appurtenant facilities described in the Section A “Physical Features” of this docket shall be added to the Comprehensive Plan.

II. The project and appurtenant facilities as described in the Section A “Physical features” of this docket are approved pursuant to Section 3.8 of the *Compact*, subject to the following conditions:

a. Docket approval is subject to all conditions, requirements, and limitations imposed by the PADEP in its NPDES permit and Part II permit, and such conditions, requirements, and limitations are incorporated herein, unless they are less stringent than the Commission’s. Commission approval of this docket is contingent on the PADEP’s approval of the Part II permit.

b. The facility and operational records shall be available at all times for inspection by the DRBC.

c. The facility shall be operated at all times to comply with the requirements of the *Water Quality Regulations* of the DRBC.

d. The docket holder shall comply with the requirements contained in the Effluent Tables in Section A.4.d. of this docket. The docket holder shall submit the required monitoring results directly to the DRBC Project Review Section. The monitoring results shall be submitted annually, absent any observed limit violations, by January 31. If a DRBC effluent limit is violated, the docket holder shall submit the result(s) to the DRBC within 30 days of the violation(s) and provide a written explanation that states the action(s) the docket holder has taken to correct the violation(s) and protect against any future violations.

e. Except as otherwise authorized by this docket, if the docket holder seeks relief from any limitation based upon a DRBC water quality standard or minimum treatment requirement, the docket holder shall apply for approval from the Executive Director or for a docket revision in accordance with Section 3.8 of the *Compact* and the *Rules of Practice and Procedure*.

f. If at any time the receiving treatment plant proves unable to produce an effluent that is consistent with the requirements of this docket approval, no further connections shall be permitted until the deficiency is remedied.

g. Nothing herein shall be construed to exempt the docket holder from obtaining all necessary permits and/or approvals from other State, Federal or local government agencies having jurisdiction over this project.

h. The discharge of wastewater shall not increase the ambient temperatures of the receiving waters by more than 5°F, nor shall such discharge result in stream temperatures exceeding 87°F.

i. Sound practices of excavation, backfill and reseeding shall be followed to minimize erosion and deposition of sediment in streams.

j. Within 30 calendar days of completion of construction of the Biomag modifications, the docket holder is required to submit to the attention of the Project Review Section of DRBC a Construction Completion Statement ("Statement") signed by the docket holder's professional engineer for the project. The statement must (a) either confirm that construction has been completed in a manner consistent with any and all DRBC-approved plans or explain how the as-built project deviates from such plans; (b) report the project's final construction cost as such cost is defined by the project review fee schedule in effect at the time application was made; and (c) indicate the date on which the project was (or is to be) placed into operation. In the event that the final project cost exceeds the estimated cost used by the applicant to calculate the DRBC project review fee, the statement must also include (d) the amount of any outstanding balance owed for DRBC review. Such outstanding balance will equal the difference between the fee paid the Commission and the fee calculated on the basis of the project's final cost, using the formula and definition of "project cost" set forth in the DRBC's project review fee schedule in effect at the time application was made.

k. Within 30 calendar days of completion of construction of the sewage conveyance system improvements and WWTP modifications to connect the North Wales flows, the docket holder is required to submit to the attention of the Project Review Section of DRBC a Construction Completion Statement ("Statement") signed by the docket holder's professional engineer for the project. The statement must (a) either confirm that construction has been completed in a manner consistent with any and all DRBC-approved plans or explain how the as-built project deviates from such plans; (b) report the project's final construction cost as such cost is defined by the project review fee schedule in effect at the time application was made; and (c) indicate the date on which the project was (or is to be) placed into operation. In the event that the final project cost exceeds the estimated cost used by the applicant to calculate the DRBC project review fee, the statement must also include (d) the amount of any outstanding balance owed for DRBC review. Such outstanding balance will equal the difference between the fee paid the Commission and the fee calculated on the basis of the project's final cost, using the formula and definition of "project cost" set forth in the DRBC's project review fee schedule in effect at the time application was made.

l. The docket holder is permitted to treat and discharge the categories of wastewaters defined in the "Area Served" section of this docket.



m. The docket holder shall make wastewater discharge in such a manner as to avoid injury or damage to fish, wildlife, and/or other aquatic life and shall avoid any injury to public or private property.

n. No sewer service connections shall be made to newly constructed premises with plumbing fixtures and fittings that do not comply with water conservation performance standards contained in Resolution No. 88-2 (Revision 2).

o. Nothing in this docket approval shall be construed as limiting the authority of DRBC to adopt and apply charges or other fees to this discharge or project.

p. The issuance of this docket approval shall not create any private or proprietary rights in the waters of the Basin, and the Commission reserves the right to amend, suspend or rescind the docket for cause, in order to ensure proper control, use and management of the water resources of the Basin.

q. A complete application for the renewal of this docket, or a notice of intent to cease the operations (withdrawal, discharge, etc.) approved by this docket by the expiration date, must be submitted to the DRBC at least 12 months prior to the expiration date below (unless permission has been granted by the DRBC for submission at a later date), using the appropriate DRBC application form. In the event that a timely and complete application for renewal has been submitted and the DRBC is unable, through no fault of the docket holder, to reissue the docket before the expiration date below, the terms and conditions of this docket will remain fully effective and enforceable against the docket holder pending the grant or denial of the application for docket approval.

r. The Executive Director may modify or suspend this approval or any condition thereof, or require mitigating measures pending additional review, if in the Executive Director's judgment such modification or suspension is required to protect the water resources of the Basin.

s. Any person who objects to a docket decision by the Commission may request a hearing in accordance with Article 6 of the Rules of Practice and Procedure. In accordance with Section 15.1(p) of the Delaware River Basin Compact, cases and controversies arising under the Compact are reviewable in the United States district courts.

t. The docket holder may request of the Executive Director in writing the substitution of specific conductance for TDS. The request should include information that supports the effluent specific correlation between TDS and specific conductance. Upon review, the Executive Director may modify the docket to allow the substitution of specific conductance for TDS monitoring.

**BY THE COMMISSION**

**DATE APPROVED: March 7, 2015**

**EXPIRATION DATE: November 30, 2015**